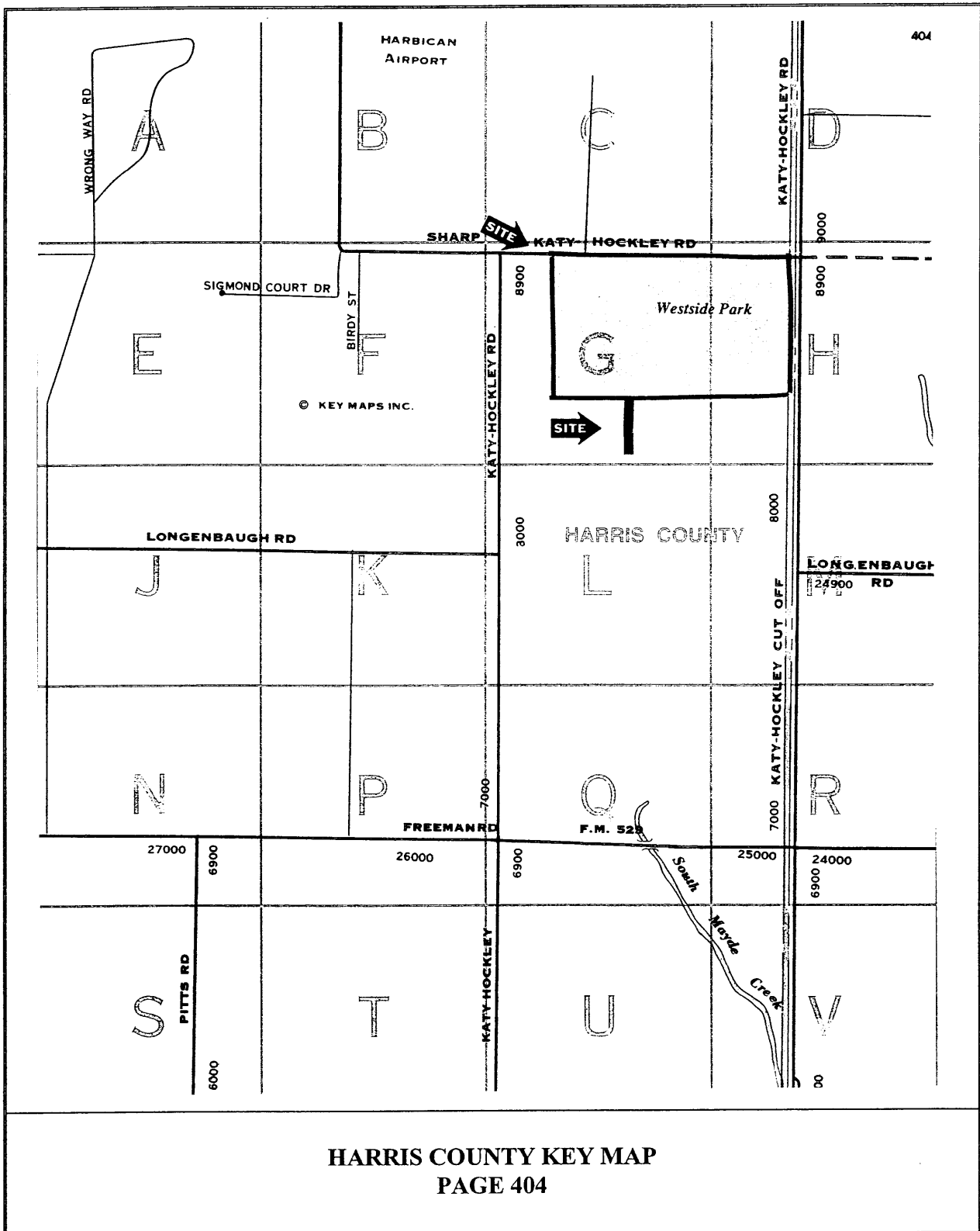
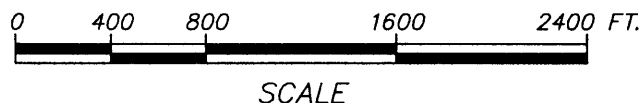
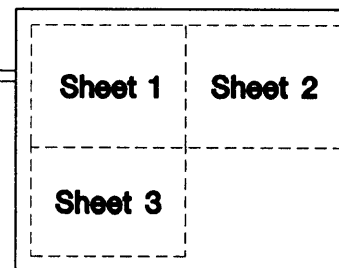
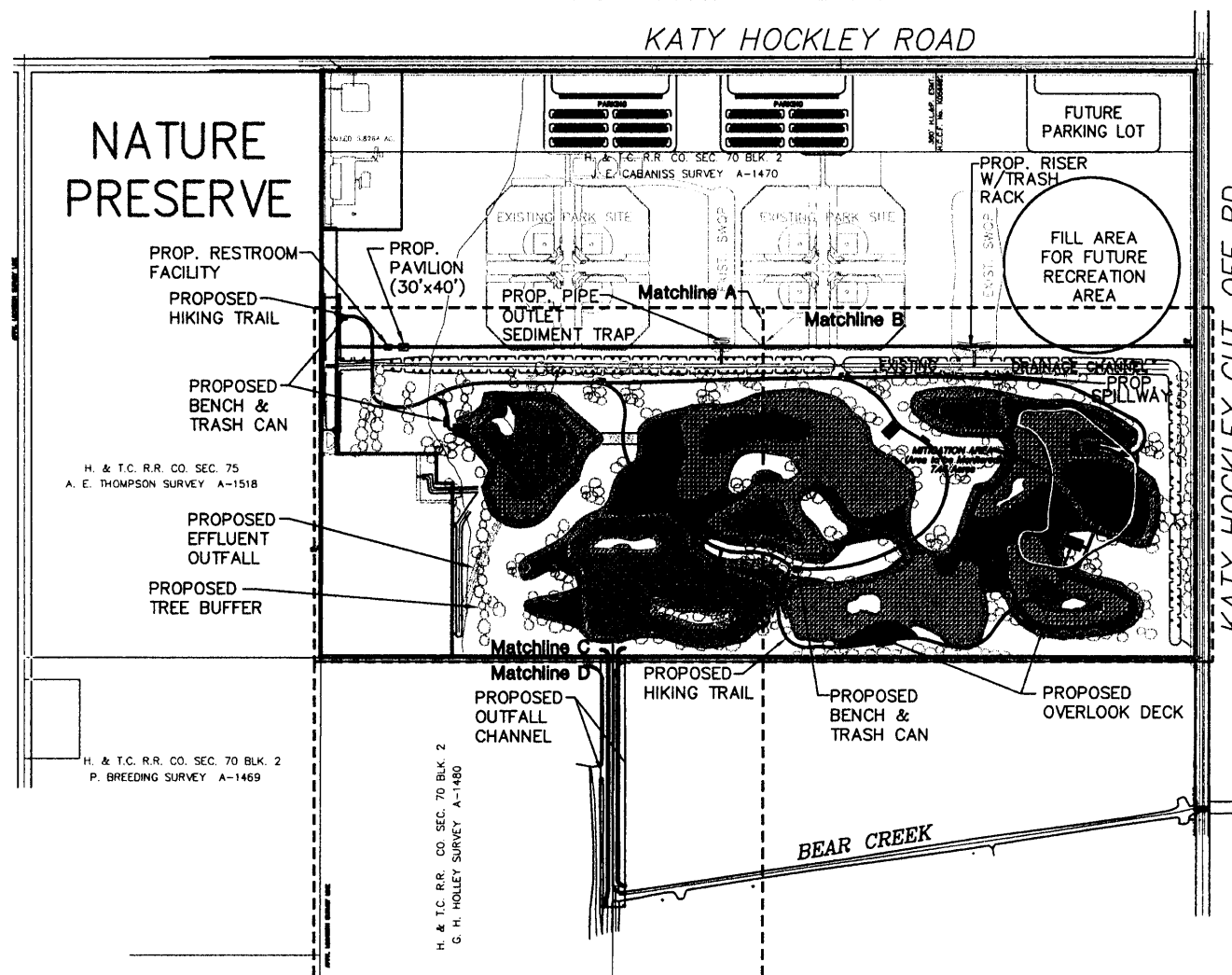
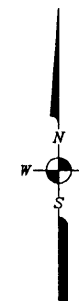


Permit No. 23510  
Harris County Precinct 3  
Page 2 of 14



# PROPOSED SITE DEVELOPMENT OVERALL DESIGN

KATY HOCKLEY ROAD

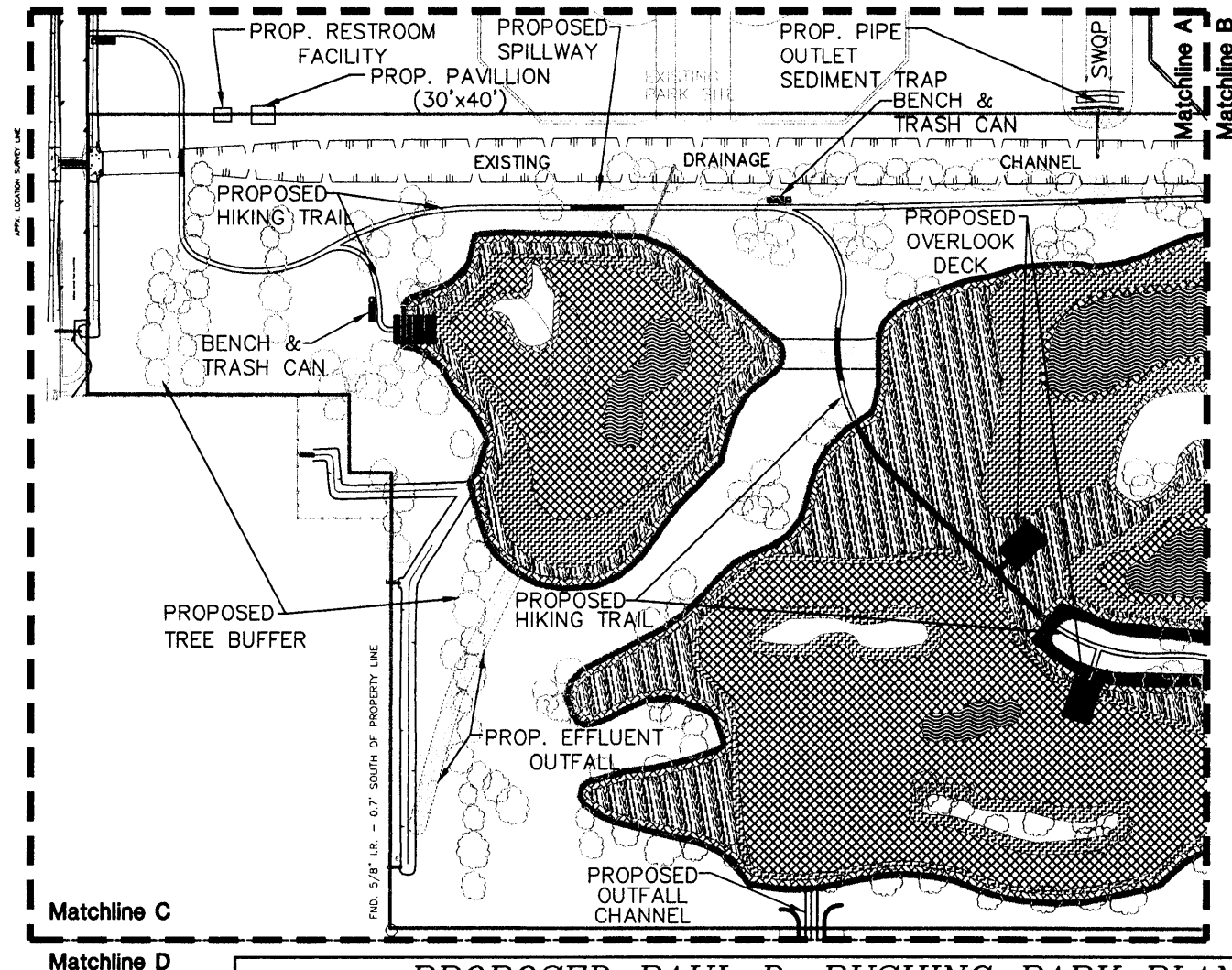
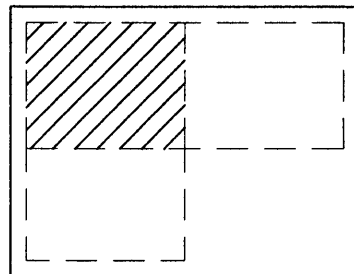
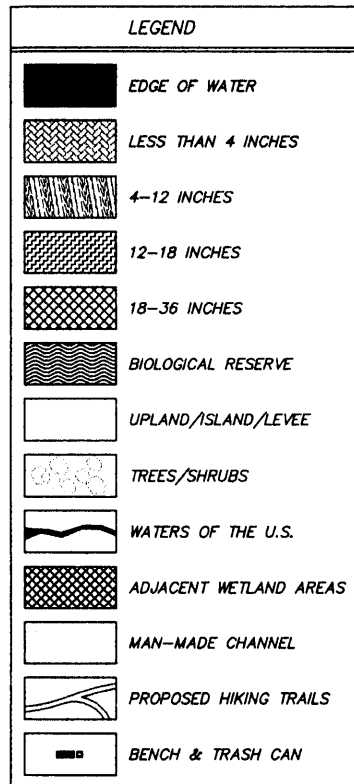


PROPOSED SITE DEVELOPMENT OVERALL DESIGN		
PROJECT #:	3511PM02	REVISIONS:
FOR:	MONTGOMERY & ASSOCIATES	Sept. 6, 2002 by C. H. Andrews
LOCATION:	PAUL D. RUSHING PARK	Feb. 10, 2004 by C. H. Andrews
	HARRIS COUNTY, TEXAS	
		<b>BERG•OLIVER ASSOCIATES, INC.</b>
		ENVIRONMENTAL SCIENCE, ENGINEERING & LAND USE CONSULTANTS
		14701 ST. MARY'S LANE, SUITE 400 HOUSTON, TX 77079
		PHONE (281) 589-0898 <a href="http://www.bergoliver.com">http://www.bergoliver.com</a>

JUN 2 1 7/04

# PROPOSED PAUL D. RUSHING PARK PLAN

## SHEET 1 OF 3



# PROPOSED PAUL D. RUSHING PARK PLAN

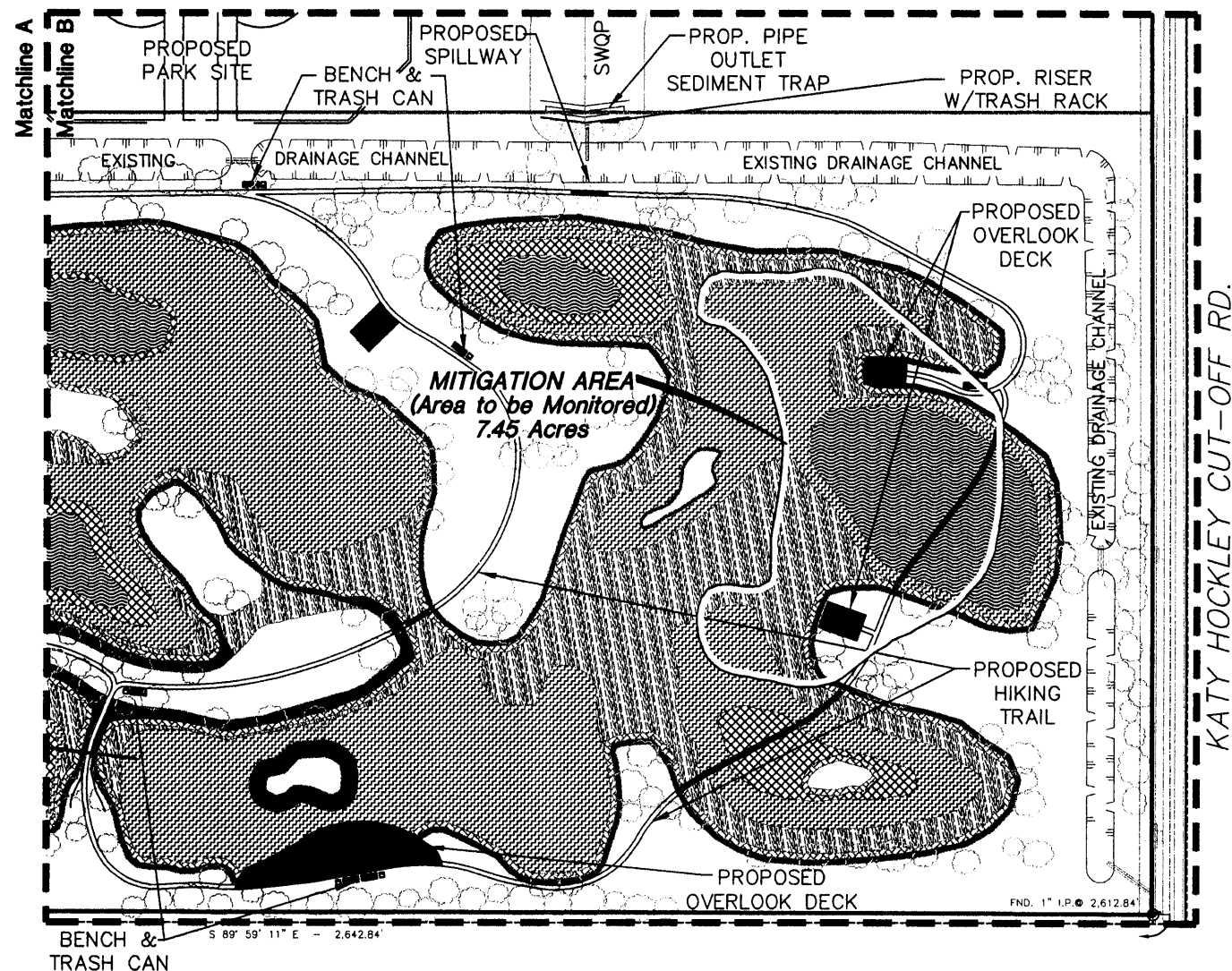
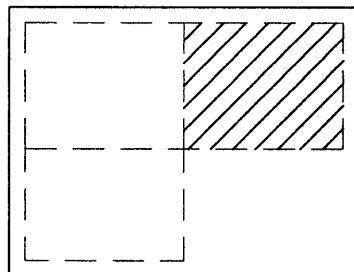
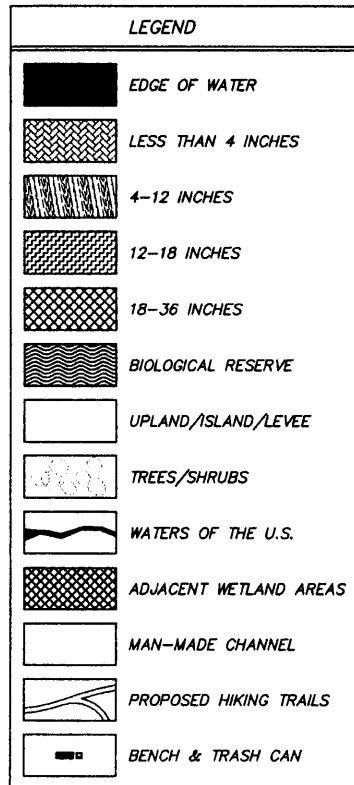
## SHEET 1 OF 3

**PROJECT #:** 3511PM02  
**FOR:** MONTGOMERY & ASSOCIATES  
**LOCATION:** PAUL D. RUSHING PARK  
HARRIS COUNTY, TEXAS

**REVISIONS:**  
Sept. 9, 2002 by C. H. Andrews  
Feb. 10, 2004 by C. H. Andrews

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*PROPOSED PAUL D. RUSHING PARK PLAN*  
*SHEET 2 OF 3*



M. & T.C. R.R. CO. SEC. 50 BLK. 2 A-443

PROPOSED PAUL D. RUSHING PARK PLAN  
SHEET 2 OF 3

PROJECT #: 3511PM02  
FOR: MONTGOMERY & ASSOCIATES  
LOCATION: PAUL D. RUSHING PARK  
HARRIS COUNTY, TEXAS

**REVISIONS:**

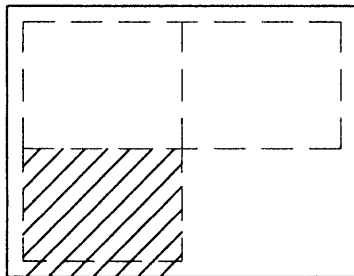
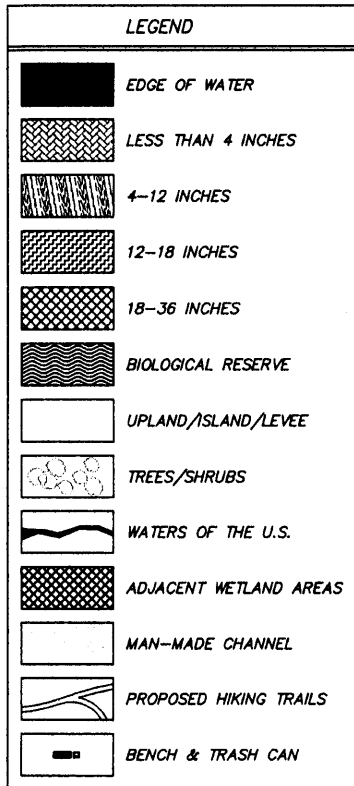
Sept. 9, 2002 by C. H. Andrews  
Feb. 10, 2004 by C. H. Andrews

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# PROPOSED PAUL D. RUSHING PARK PLAN

## SHEET 3 OF 3

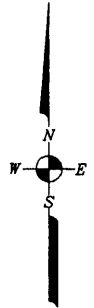
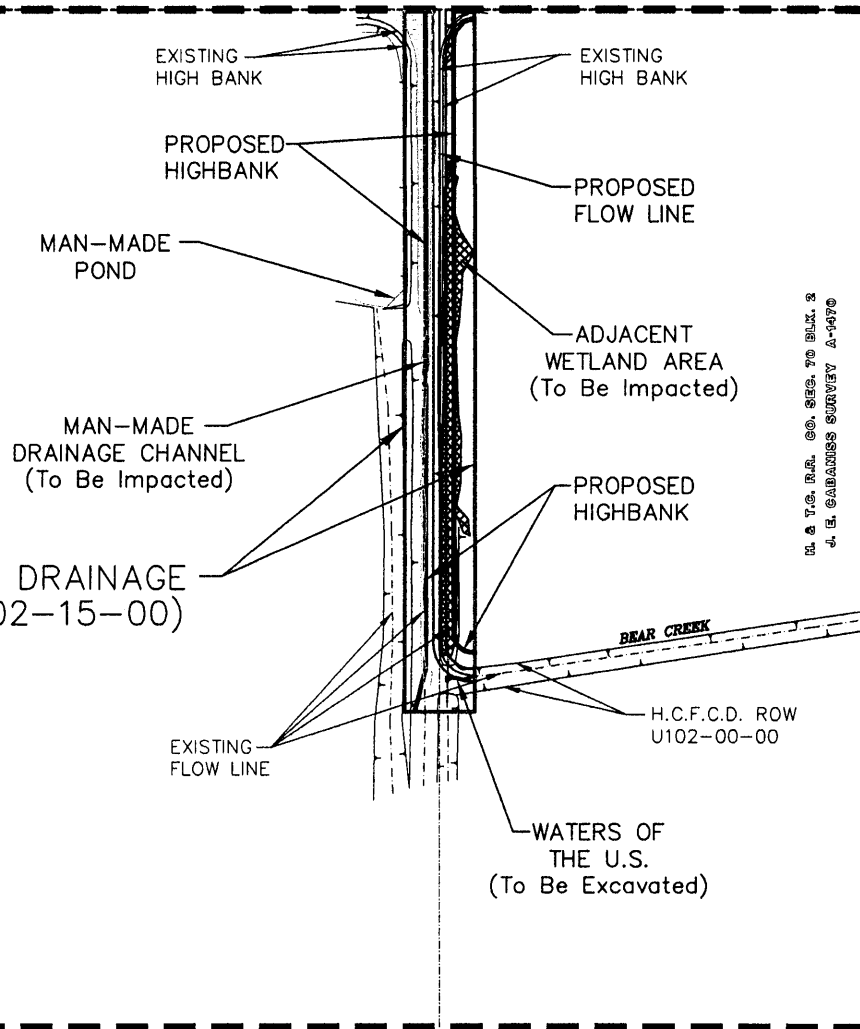


Matchline C

Matchline D

PROPOSED 110' DRAINAGE  
EASEMENT (U102-15-00)

M. & T.G. R.R. CO. SEC. 70 BLK. 2  
G. H. HOLLEY SURVEY A-1480



0 150 300 600 900 FT.

SCALE

# PROPOSED PAUL D. RUSHING PARK PLAN

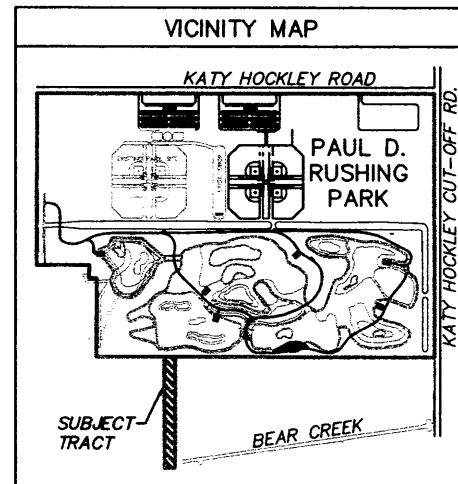
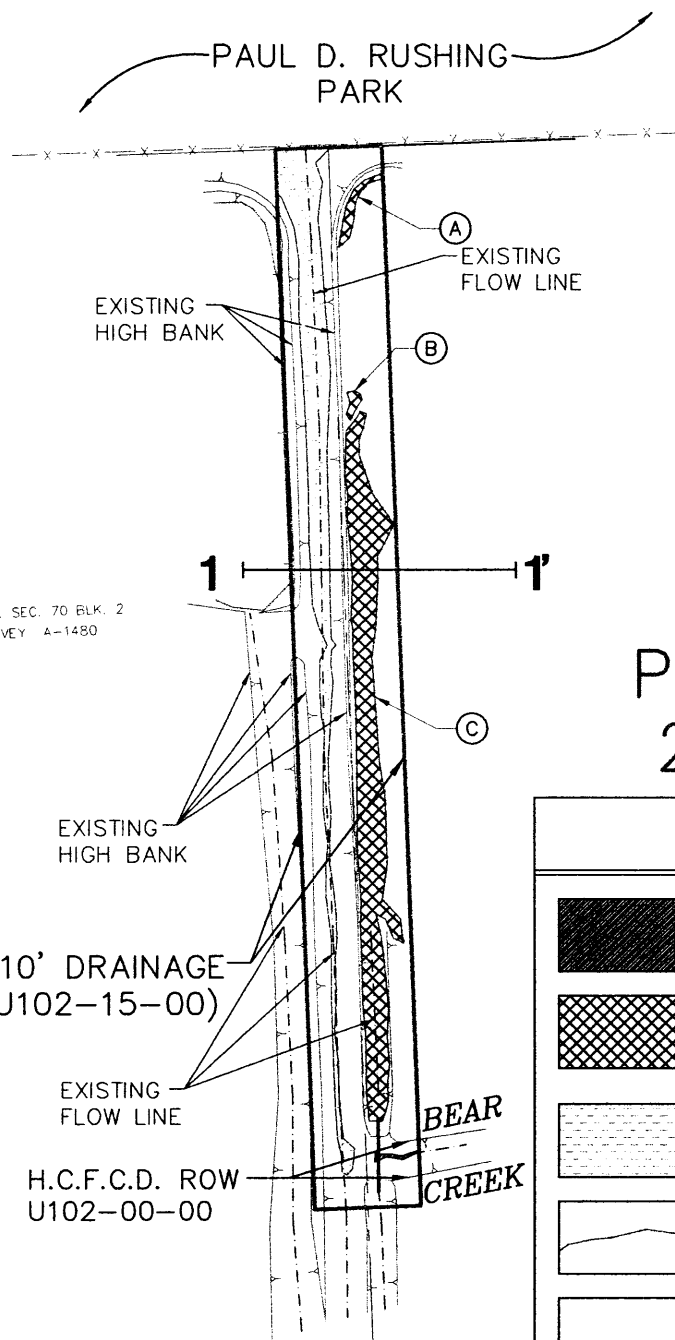
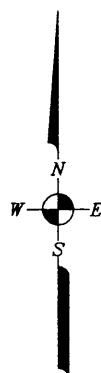
## SHEET 3 OF 3

PROJECT #: 3511PM02  
FOR: MONTGOMERY & ASSOCIATES  
LOCATION: PAUL D. RUSHING PARK  
HARRIS COUNTY, TEXAS

REVISIONS:  
Sept. 9, 2002 by C. H. Andrews  
Feb. 10, 2004 by C. H. Andrews

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LAND USE CONSULTANTS  
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# PROPOSED SITE DEVELOPMENT WETLAND OVERLAY MAP



PROJECT AREA  
2.80± ACRES

LEGEND	ACREAGE
JURISDICTIONAL WATERS OF THE U.S. TO BE EXCAVATED/CONTOURED	0.01
ADJACENT WETLAND AREAS TO BE IMPACTED	0.45
<b>TOTAL</b>	<b>0.46</b>
MAN-MADE DRAINAGE CHANNEL NON-JURISDICTIONAL	0.39
MAN-MADE STOCK POND NON-JURISDICTIONAL	N/A
UPLAND AREAS	1.95
WETLAND IDENTIFICATION	

0 100 200 400 600 FT.

SCALE

## PROPOSED SITE DEVELOPMENT WETLAND OVERLAY MAP

PROJECT #: 3511PM02

FOR: MONTGOMERY & ASSOCIATES

LOCATION: OUTFALL CHANNEL-PAUL D. RUSHING PARK  
HARRIS COUNTY, TEXAS

### REVISIONS:

Aug. 20, 2002 by C. H. Andrews  
Feb. 9, 2004 by C. H. Andrews

**BERG•OLIVER ASSOCIATES, INC.**

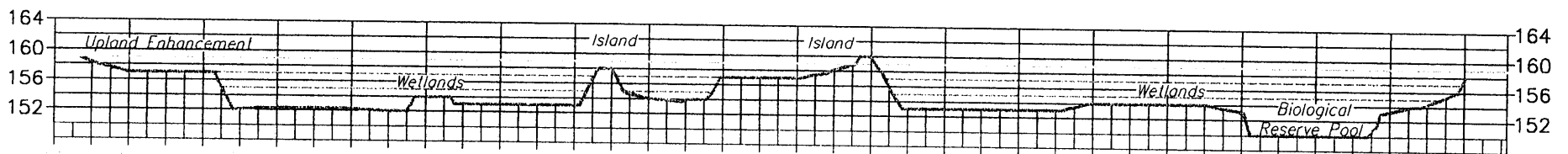
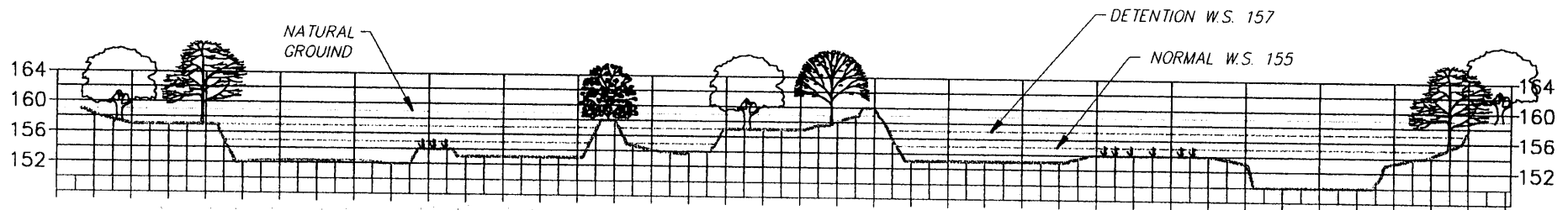
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PHONE (281) 589-0898 <http://www.bergoliver.com>



# PROPOSED MITIGATION PLAN

## TYPICAL CROSS SECTIONS



NOT TO SCALE

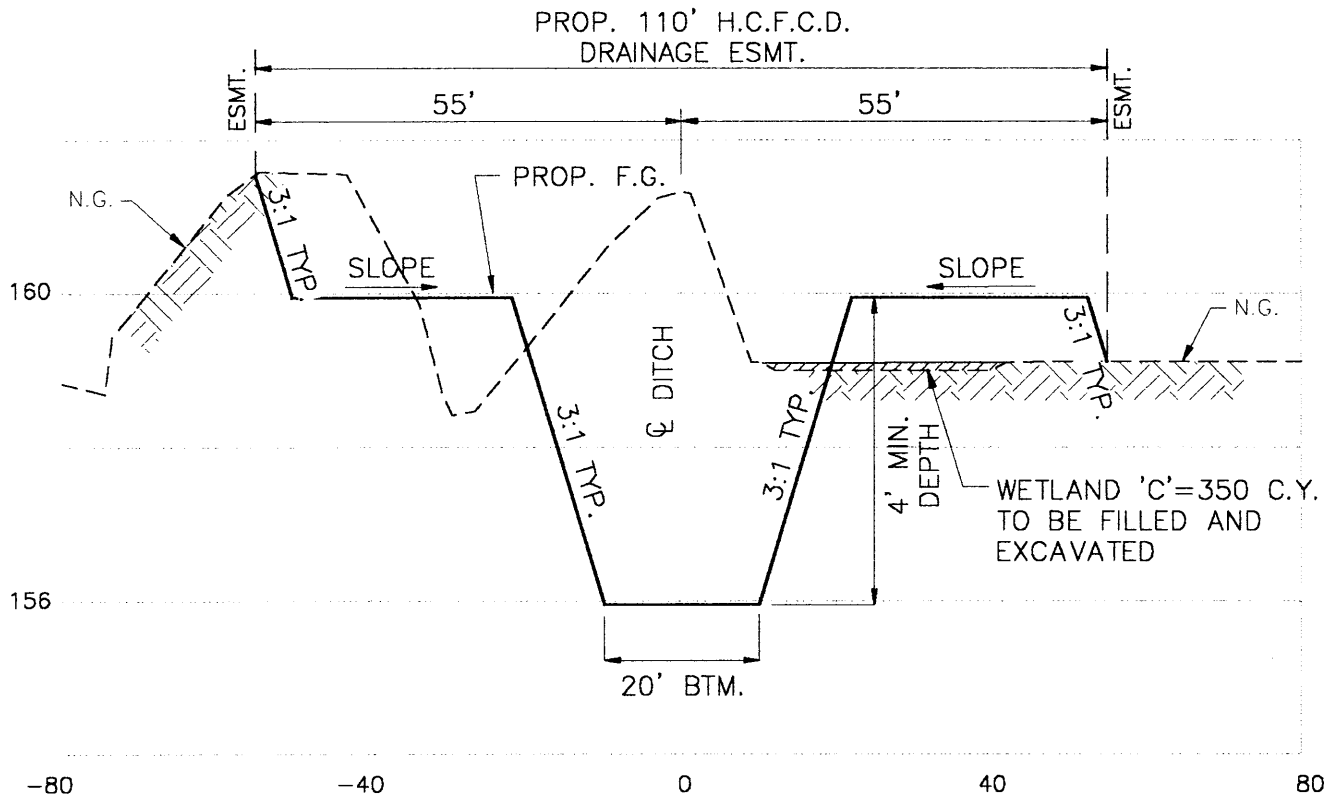
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PROJECT #: 3511PM02		REVISIONS:	
FOR: MONTGOMERY & ASSOCIATES		July 9, 2002 by C. H. Andrews	
LOCATION: WESTSIDE PARK-KATY HOCKLEY CUTOFF RD.			
HARRIS COUNTY, TEXAS			
		BERG•OLIVER ASSOCIATES, INC.	
		ENVIRONMENTAL SCIENCE, ENGINEERING & LAND USE CONSULTANTS	
		14701 ST. MARY'S LANE, SUITE 400 HOUSTON, TX 77079	
		PHONE (281) 689-0898 <a href="http://www.bergoliver.com">http://www.bergoliver.com</a>	

JUN 21 2004

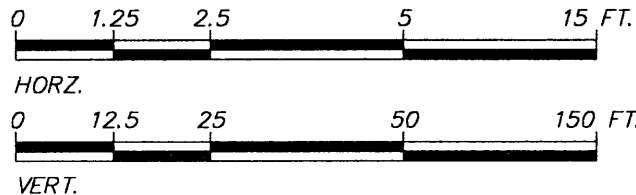


# PROPOSED SITE DEVELOPMENT

## TYPICAL CROSS SECTION 1-1'



TYPICAL SECTION 1-1'



SCALE

### PROPOSED SITE DEVELOPMENT

### TYPICAL CROSS SECTION

PROJECT #: 3511PM02

FOR: MONTGOMERY & ASSOCIATES

LOCATION: OUTFALL CHANNEL - WESTSIDE PARK  
HARRIS COUNTY, TEXAS

REVISIONS:

Aug. 20, 2002 by C. H. Andrews

**BERG-OLIVER ASSOCIATES, INC.**

ENVIRONMENTAL SCIENCE, ENGINEERING &  
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WETLAND CONSTRUCTION PLANT LIST AND GUIDELINES

VEGETATION I.D.	VEGETATION SPECIES	LOCATION	WATER DEPTH	PLANTING MECHANISM	PLANTING SIZES	SOIL TYPE	NUMBER OF PLANTS	PLANTING WIDTH
HERBS	<i>Eleocharis montevidensis</i>	Emergent	Less than 4 inches	Plugs	Plugs	Peaty, Wet		
	<i>Eleocharis montana</i>	Emergent	4 to 12 inches	Plugs	Plugs	Peaty, Wet		
	<i>Eleocharis quadrangulata</i>	Emergent	4 to 12 inches	Plugs	Plugs	Peaty, Wet		
	<i>Iris pseudacorus</i>	Emergent	Less than 4 inches	Plugs	Plugs	Peaty, Wet		
	<i>Eleocharis equisetoides</i>	Emergent	4 to 12 inches	Plugs	Plugs	Peaty, Wet		
	<i>Hydrolea ovata</i>	Emergent	Less than 4 inches	Plugs	Plugs	Wet		
	<i>Iris virginica</i>	Emergent	Less than 4 inches	Plugs/gallon sizes	Plugs or 1 gallon			
	<i>Rhynchospora spp.</i>	Emergent	Less than 4 inches	Plugs/gallon sizes	Plugs or 1 gallon	Wet		
	<i>Arundinaria gigantia</i>	Emergent	Less than 4 inches	Plugs/gallon sizes	Plugs or 1 gallon	Wet		
	<i>Carex cherokeensis</i>	Emergent	4 to 12 inches	Plugs	Plugs	Peaty, Wet		
	<i>Juncus effusus</i>	Emergent	4 to 12 inches	Plugs/gallon sizes	Plugs or 1 gallon	Wet		
	<i>Sagittaria latifolia</i>	Emergent	4 to 12 inches	Plugs	Plugs	Wet		
	<i>Bulbon Bush</i>	Emergent	4 to 12 inches	Plugs	Plugs	Wet		
	<i>Polygonum hydropiperoides</i>	Emergent	4 to 12 inches	Plugs	Plugs	Wet		
	<i>Ludwigia palustris</i>	Emergent	4 to 12 inches	Plugs/gallon sizes	Plugs or 1 gallon	Wet		
	<i>Ludwigia peploides</i>	Submergent/Emergent	12 to 18 inches	Plugs	Plugs	Wet		
	<i>Paspalum plicatulum</i>	Island/Upland	No water depth	Gallon sizes	1 gallon	Moist to Wet		
	<i>Schizachyrium scoparium</i>	Island/Upland	No water depth	Gallon sizes	1 gallon	Well-drained		
	<i>Panicum virgatum</i>	Island/Upland	No water depth	Gallon sizes	1 gallon	Well-drained		
	<i>Sorghastrum nutans</i>	Island/Upland	No water depth	Gallon sizes	1 gallon	Moist		
	<i>Tripsacum dactyloides</i>	Island/Upland	No water depth	Gallon sizes	1 gallon	Moist		
	<i>Muhlenbergi capillaris</i>	Island/Upland	No water depth	Gallon sizes	1 gallon	Well-drained		
TOTAL							249,120	3' centers
FLOATING VEGETATION	<i>Polamogeton nodosus</i>	Submergent/Emergent	12 to 18 inches	Plugs	Plugs	Wet		
	<i>Nymphaea ordata</i>	Floating	18 to 36 inches	Bare-rooted	Bare-rooted	Wet		
	<i>Nymphaea mesican</i>	Floating	18 to 36 inches	Bare-rooted	Bare-rooted	Wet		
	<i>Nymphoides aquatica</i>	Floating	18 to 36 inches	Bare-rooted	Bare-rooted	Wet		
TOTAL							21,600	3' centers
TREES	<i>Taxodium distichum</i>	Levee	Edge of water	Gallon sizes	5 gallon	Alkaline (pH=8)		
	<i>Betula nigra</i>	Levee	Edge of water	Gallon sizes	5 gallon	Alkaline (pH=8)		
	<i>Fraxinus pennsylvanica</i>	Levee	Edge of water	Gallon sizes	5 gallon	Alkaline (pH=8)		
	<i>Quercus nigra</i>	Island/Upland	No water depth	Gallon sizes	5 gallon	Alkaline (pH=8)		
TOTAL							781	12' - 15' centers
TOTAL							170	30' centers
SHRUBS	<i>Foresteria acuminata</i>	Levee	Edge of water	Gallon sizes	3 gallon	Alkaline (pH=8)		
	<i>Hibiscus militaris</i>	Island/Upland	No water depth	Gallon sizes	3 gallon	Alkaline (pH=8)		
	<i>Myrica pusilla</i>	Island/Upland	No water depth	Gallon sizes	3 gallon	Alkaline (pH=8)		
TOTAL							3067	10' centers

## GUIDELINES FOR PLANTING VEGETATION

### Herbs (Plugs or gallon sizes):

- Dig hole deep enough for the root ball of the plant to extend fully into the soil, without the upper stem being submerged.
- Place the plug in the soil and cover root ball with soil taken out of the hole.
- Settle soil by adding water (depends on area)
- Compact the soil firmly around plug by hand to allow for a stable, upright plant. Do not tamp the soil, as this may cause root damage.

### Shrubs and Trees (Gallon sizes):

- Dig hole (square) 2 times as wide as the root ball, but no deeper than the root ball to keep plant from settling too deep. The square hole allows for root penetration out of hole and into surrounding soil.
- Handle shrubs and trees by the root ball (not the trunk)
- Plant with root collar flush or slightly above natural grade
- Fill hole with same soil that came out of hole
- Settle soil by adding water
- Do not tamp the soil, as this may cause root damage
- Stake the trees no longer than one year if staking is even required
- Mulch (wood chips, pine bark, leaf litter) around the shrubs and trees 2-3 inches deep and up to, but not touching trunk
- Watering: Water for at least the first year, but do not over water.  
The newly planted trees will require 6-8 gallons of water per diameter inch of trunk per week.
- Protection: Protect the plants from animals (and humans)  
A wire-mesh cage at least 3 feet in diameter and 4 feet tall staked to the ground will be sufficient for trees.  
The same type of cage made to fit the size of the shrubs should be also be used.
- Do not fertilize plants during the first growing season, as too much nitrogen may burn tender roots, which will slow growth and delay establishment.

### Floating Vegetation (Bare-rooted plants):

- Using a spade, separate the soil by inserting the spade into the ground and pushing it forward.
- Place the root of the plant in the separated soil approximately one inch deep (if soil is sandy place plant deeper into ground)
- Push the separated soil back into place to cover the root of the plant
- The plants should be planted in water depths that allow the leaf to sit on the water surface.

\*All existing topsoil should be removed prior to planting activities and should be placed in stockpiles near the area it is removed. This will allow for easy replacement of the topsoil after planting activities are completed. The stockpiles should be no bigger than 5 feet tall by 15 feet wide to keep decomposition of the soils from occurring.

**Paul D. Rsuhing Park – Prior Wetland Impacts**

1. December 1998 - East/West Ditch

Total Area of Ditch is 40,500 sq. feet.

$40,500 \text{ sq. ft.} / 43,560 = .93$  total acreage of ditch.

$.93 \times .316 (31.6 \%) = .29$  acres impacted.

2. August 1999-January 2000 – Quad 1, Parking Lot, 2 Detention Areas, Fill to Quad 3

Total Area of New Part of Ditch is 36,000 sq. feet.

Total Area of Baseball Field is 900,000 sq. feet.

Total Area of Parking Lot is 190,800 sq. feet.

Total Area of Detention Area is 151,200 sq. feet.

Total Sq. Feet is 1,278,000.

$1,278,000 \text{ sq. ft.} / 43,560 = 29.34$  total acreage of area.

$29.34 \times .21 (21\%) = 6.16$  acres impacted.

3. May 2002 – Quad 1 Expansion, Quad 2, Fill to Quad 2 and 3, Barrow Pit Dug

Total Area of New Parking Lot is 36,000 sq. feet.

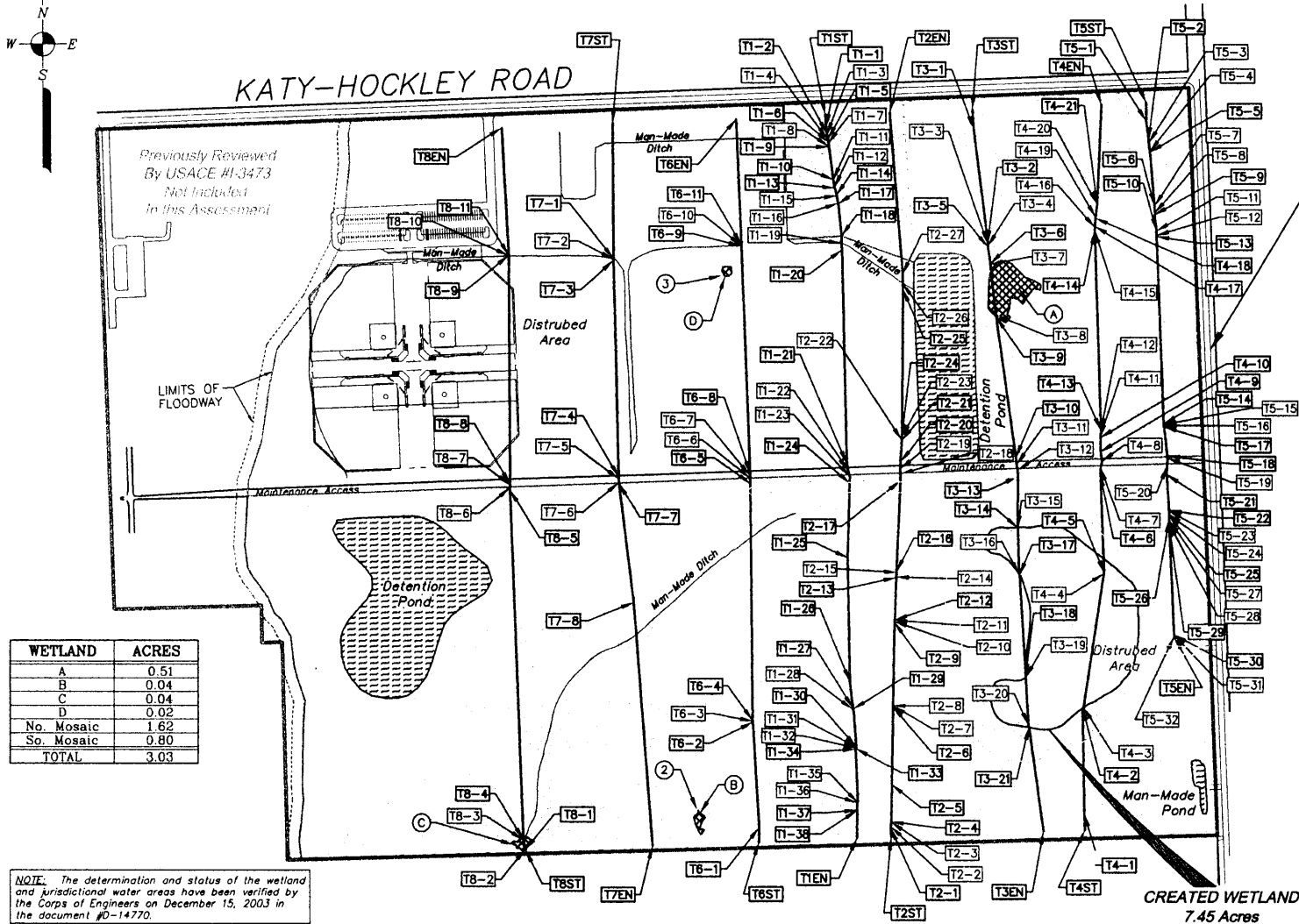
Total Area Between Detention Area and Baseball Field is 90,000 sq. feet.

Total Sq. Feet is 126,000.

$126,000 \text{ sq. ft.} / 43,560 = 2.89$  total acreage of area.













$2.89 \times .104 (10.4\%) = .30$  acres impacted.

*WATERS OF THE UNITED STATES  
WETLAND DELINEATION MAP*



-KATY HOCKLEY  
CUT-OFF ROAD

The boundaries of the jurisdictional areas identified were collected using a Trimble TSC1 data logger and a Trimble Pro-XRS integrated GPS/Beacon Receiver. Data was collected using real time kinematics (RTK) by the use of a Trimble Pro-XRS system. The collected data was processed using Pathfinder Office software. Approximately 1660 point positions (coordinates) were collected and used to generate the features shown on this map. The GPS units were "localized" or oriented to a local coordinate system. The position of the boundary corners was determined by monitoring the residuals and other pertinent data provided by the software, confirmed that the positional accuracy of the collected points relative to the boundary corners were sub-meter. If needed, data for a GPS station collection could be furnished by BergsOff Associates, Inc., upon the USACE's request.

LEGEND		ACREAGE
	JURISDICTIONAL WETLAND AREAS	0.61
	MOSAIC WETLAND AREA - NORTH 5.1% OF TOTAL AREA - 31.76 Acres	1.62
	MOSAIC WETLAND AREA - SOUTH 0.8% OF TOTAL AREA - 100.06 Acres	0.80
	TOTAL	3.03
	MAN-MADE AREAS NON-JURISDICTIONAL	8.93
	DISTURBED AREAS	75.63
	MAN-MADE DITCHES	
 	SAMPLE POINTS	
	TRANSECT LINES	
	TRANSECT POINTS - WETLAND AREA	
	TRANSECT POINTS - UPLAND AREA	
	NOT INCLUDED IN THIS ASSESSMENT	27.48

NOTE: The determination and status of the wetland and jurisdictional water areas have been verified by the Corps of Engineers on December 15, 2003 in the document #D-14770.

Wetland and jurisdictional water areas depicted, have been classified as "isolated" or "adjacent" based upon Berg+Oliver Associates, Inc.'s assessment of the jurisdictional designation of wetland and water areas. The actual designations should be verified by the Corps of Engineers, the final authority on jurisdictional status.



*WATERS OF THE UNITED STATES*  
*WETLAND DELINEATION MAP*

PROJECT #: 4492WD03  
FOR: HARRIS COUNTY PRECINCT #3  
LOCATION: PAUL RUSHING PARK  
HARRIS COUNTY, TEXAS

**REVISIONS:**

Oct. 14, 2003 by C. H. Andrews
Nov. 12, 2003 by C. H. Andrews
Feb. 10, 2004 by C. H. Andrews
May 10, 2004 by C. H. Andrews

**BERG•OLIVER ASSOCIATES, INC.**  
ENVIRONMENTAL SCIENCE, ENGINEERING &  
LAND USE CONSULTANTS

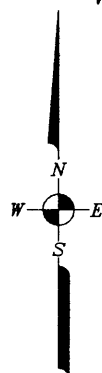
14701 ST. MARY'S LANE, SUITE 400 HOUSTON, TX 77079  
PHONE (281) 589-0898 <http://www.bergoliver.com>

JUN 21 2004

# WATERS OF THE UNITED STATES

## WETLAND DELINEATION MAP

Permit No. 23510  
Harris County Precinct 3  
Page 14 of 14



H. & T.C. R.R. CO. SEC. 70 BLK. 2  
G. H. HOLLEY SURVEY A-1480

PAUL D. RUSHING PARK

EXISTING HIGH BANK

EXISTING FLOW LINE

Wetland and jurisdictional water areas depicted, have been classified as "isolated" or "adjacent" based upon Berg•Oliver Associates, Inc.'s assessment of the jurisdictional designation of wetland and water areas. The actual designations should be verified by the Corps of Engineers, the final authority on jurisdictional status.

WETLAND	ACRES
A	0.02
B	0.01
C	0.42
TOTAL	0.45

EXISTING HIGH BANK

PROPOSED 110' DRAINAGE EASEMENT (U102-15-00)

EXISTING FLOW LINE

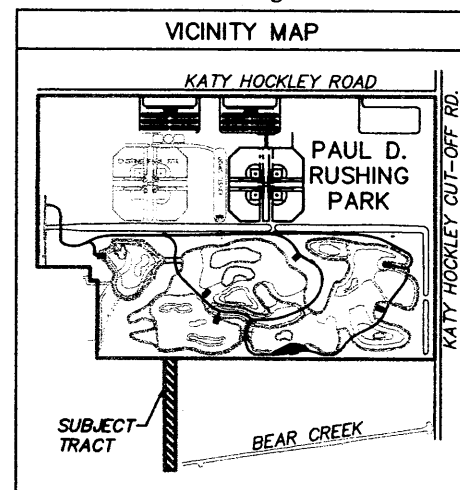
H.C.F.C.D. ROW  
U102-00-00

BEAR CREEK

PROJECT AREA  
2.80± ACRES

0 100 200 400 600 FT.

SCALE



The boundaries of the jurisdictional areas identified were collected using a Trimble TSC1 data logger and a Trimble Pro-XRS integrated GPS/Beacon Receiver. Data was collected using real time kinematics (RTK) by the use of the OmniStar satellite system. Features were generated utilizing Pathfinder Office GPS software. Approximately 566 point positions (coordinates) were collected and used to generate the features shown on this map. The GPS units were "localized" or oriented to a local coordinate system for the perimeter boundary corners of the subject property. Monitoring of the residuals and other pertinent data provided by the software, confirmed that the positional accuracy of the collected points relative to the boundary corners were sub-meter. If needed, data for all GPS positions collected, can be furnished by Berg•Oliver Associates, Inc., upon the USACE's request.

LEGEND	ACREAGE
JURISDICTIONAL WATERS OF THE U.S.	0.01
ADJACENT WETLAND AREAS JURISDICTIONAL	0.45
<b>TOTAL</b>	<b>0.46</b>
MAN-MADE DRAINAGE CHANNEL NON-JURISDICTIONAL	0.39
MAN-MADE STOCK POND NON-JURISDICTIONAL	N/A
UPLAND AREAS	1.95
WETLAND IDENTIFICATION	

# WATERS OF THE UNITED STATES

## WETLAND DELINEATION MAP

PROJECT #: 3634WD02  
FOR: MONTGOMERY & ASSOCIATES  
LOCATION: OUTFALL CHANNEL-PAUL D. RUSHING PARK  
HARRIS COUNTY, TEXAS

REVISIONS:  
July 25, 2002 by C. H. Andrews

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